Patients at high risk for psychiatric symptoms after a stay in the intensive care unit

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Results of a multi-institutional national study of nearly 700 people who survived life-threatening illness with a stay in an intensive care unit (ICU) suggest that a substantial majority of them are at high risk for persistent depression, anxiety and post-traumatic stress disorder—especially if they are female, young and unemployed.

The study, led by Johns Hopkins University researchers, found that two-thirds of study participants who survived a condition called acute respiratory distress syndrome (ARDS) and spent time in the ICU self-reported symptoms of at least one of these psychiatric disorders, and one-third of those patients with at least one psychiatric symptom said they experienced all three at the same time.

Contrary to the common risk factors associated with post-ARDS physical impairments and mortality, such as severity of illness and length of ICU stay, this study demonstrated that none of these risk factors had positive association with psychiatric symptoms.

"We need to pay more attention to the psychiatric vulnerability of ICU patients in recovery who are women, younger and unemployed prior to hospitalization, not just look at traditional measures of risk, such as greater illness severity and longer length of stay," says Dale Needham, M.D., professor of medicine at the Johns Hopkins University School of Medicine.

"Given the high co-occurrence of psychiatric symptoms, ARDS survivors should be simultaneously evaluated for a full spectrum of psychiatric consequences to maximize recovery," he adds. "We must pay heed to those who are not as severely ill as others when monitoring—and considering ways to improve—a person's life after an ICU stay."

In a report on the study, published in the May issue of the journal *Critical Care Medicine*, the investigators point out that women, younger people, and those who were unemployed or who misused alcohol prior to hospitalization and survived ARDS were at increased risk for psychiatric symptoms.

Based on their self-reporting at six months, 36 percent of participants showed signs of depression, 42 percent showed signs of anxiety and 24 percent showed signs of PTSD. At 12 months, prevalence of these symptoms was nearly the same—36, 42 and 23 percent, respectively.

Of the patients who experienced symptoms of depression, anxiety or PTSD at six months, more than one-half—57 to 66 percent—still had the same symptoms at 12 months, indicating the persistence of the symptoms. Of the patients at six months without substantial symptoms of depression, anxiety or PTSD, less than 15 percent later developed symptoms by the one-year mark. Most important, the researchers say, the majority of survivors—63 percent—with any psychiatric illness experienced two or more symptoms at the same time at both six and 12 months.

"We know that depression, anxiety and PTSD can significantly decrease quality of life," says Minxuan Huang, Sc.M., biostatistician in the Division of Pulmonary and Critical Care Medicine at the Johns Hopkins University School of Medicine. "Understanding that patients will likely experience psychiatric symptoms after an ICU stay can help drive awareness and the development of improved mental health interventions."

For the study, researchers at Johns Hopkins and 40 other hospitals from across the U.S. recruited

698 participants. A total of 645 survivors had a phone-based assessment to collect data for this study at the six-month follow-up, and 606 had a similar follow-up at one year. A total of 613 completed at least one psychiatric measure at six months by using the Hospital Anxiety and Depression Scale and the Impact of Event Scale-Revised (IES-R) surveys. There were 316 female and 297 male participants with an average age of 49 who were mostly white—82 percent. At the one-year follow-up, 576 participants completed at least one psychiatric self-assessment.

Needham and his team say that young age, female gender and joblessness are important risk factors for having one or more psychiatric symptoms compared to severity of the illness and the length of stay, traditionally considered the major risk factors for post-ICU physical impairments and mortality.

According to the results from a multivariable analysis, across four age groups—18 to 39, 40 to 49, 50 to 59 and 60 to 89—the younger age group was 16 percent and 23 percent more likely to experience anxiety or PTSD, respectively, than its next older age group. Female patients are at 26 percent, 43 percent and 80 percent higher risk than male patients for depression, anxiety and PTSD symptoms, respectively.

Unemployment, alcohol misuse and longer use of opioids in the ICU were also associated with the higher risk of psychiatric symptoms. Patients who were unemployed prior to hospitalization were 26 to 40 percent more likely to have psychiatric symptoms after hospital discharge. Similarly, patients with alcohol misuse or who received opioids for a longer duration during their ICU stay were at 39 to 79 percent and 8 to 11 percent higher risk of having psychiatric symptoms, respectively.

Needham and his colleagues caution that this study only looked at patients with ARDS, and the risks may not be applicable to those in the ICU with other disorders. They also note that the psychiatric symptoms were self-reported and not clinically diagnosed, although the self-testing instruments they used are widely considered valid for assessing depression, anxiety and PTSD symptoms.

Needham and Huang say they plan to investigate preventive and therapeutic measures that might help such patients. They also plan to look further into the complex role of in-ICU opioid administration and dosages.

ARDS is commonly caused by different insults, such as infection, and involves fluid buildup in the tiny air sacs of the lungs. ARDS is often treated using mechanical ventilators, a critical part of life support technology. About 190,000 cases of ARDS are reported each year, and nearly 75,000 people die of it.

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